



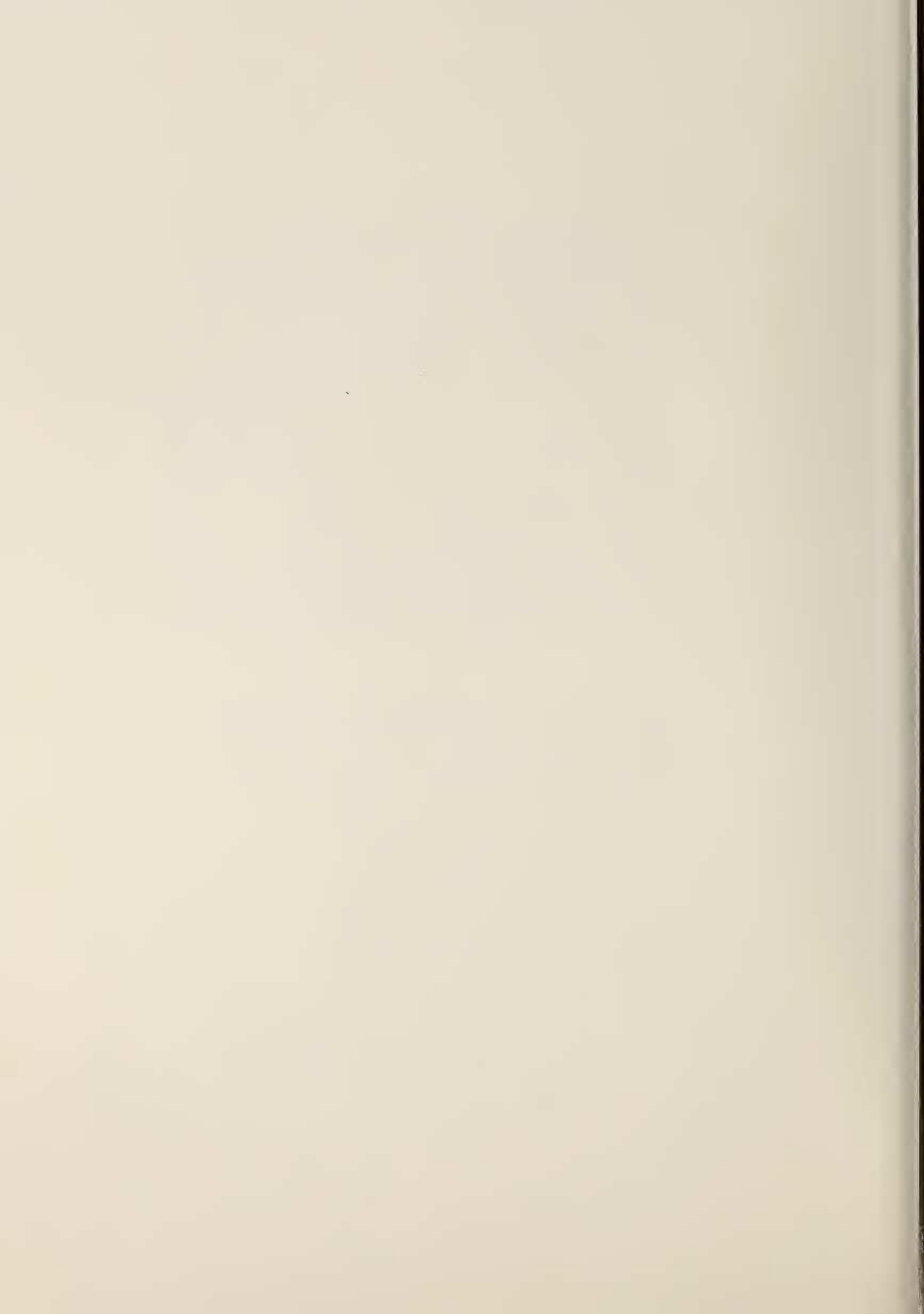
*Cadlina limbaughi* LANCE, spec. nov.



*Phidiana pugnax* LANCE, spec. nov.



Tip in Plate 38



The specific name *limbaughi* was chosen to honor the late Conrad Limbaugh who was the first to collect this and many other subtidal species of opisthobranchs, and Mrs. Nan Limbaugh whose interest in this group has resulted in the acquisition of previously unknown bathymetric distributions for many forms.

The holotype is deposited at the California Academy of Sciences where it is registered as Paleo. Type Coll. No. 12'396; it will be incorporated into the Frank Mace MacFarland Memorial Collection of Nudibranchs.

Remarks: Four other species of *Cadlina* have been recorded from the Pacific Coast of North America. MacFarland (1906, p. 128) has compared the details of the radula for *C. pacifica*, *C. marginata*, and *C. flavomaculata*; and Marcus (1961, p. 15) has described and figured that of the fourth species, *C. sparsa*. The following list offers distinguishing characteristics of the color patterns of each species and will serve to readily identify living animals.

1. *Cadlina pacifica* Bergh, 1880

Body bluish white; rhinophores yellow, at least in the preserved state; nine tripinnate gills; known only from Bergh's original material from the Aleutian Islands, Alaska.

2. *Cadlina flavomaculata* MacFarland, 1905

Body dead white to yellowish white; rhinophores dark brown; six to eleven or more yellow spots in a row on either side of the notum; ten to twelve unipinnate and bipinnate gills; Vancouver Island, British Columbia, to Point Eugenia, Mexico.

3. *Cadlina marginata* MacFarland, 1905

The largest *Cadlina* so far described from this coast; up to 80 mm. long and 40 mm. broad; body white to yellowish white covered with low tubercles each tipped with bright yellow; a narrow band of yellow around the border of the notum; six bipinnate gills; Vancouver Island, British Columbia, to Point Eugenia, Mexico.

4. *Cadlina sparsa* (Odhner, 1921)

Body pale yellowish white to light tan with the rhinophores and gills a slightly darker shade of the same color; an uneven row of small black or dark brown spots often with yellow or orange centers present all around the notum or groups of similar spots on either side of the body; 12 unipinnate gills; San Diego, California, to the Juan Fernandez Islands, Chile.

5. *Cadlina limbaughi* spec. nov., Lance

Body white with opaque white spots scattered over the notum; rhinophores very dark reddish brown; six bipinnate and tripinnate gills of the same color but a slightly lighter shade; San Diego, California, to Los Coronados Islands, Mexico.

## NUDIBRANCHIA

### Eolidacea

### CLEIOPROCTA

#### FACELINIDAE

#### Facelininae

*Phidiana pugnax* LANCE, spec. nov.

(Plate 38, Textfigures 4 to 8)

Synonymy: *Phidiana spec.*, Lance, 1961

The largest of 36 specimens collected measured 63 mm. long, 10 mm. broad, and 9 mm. high when actively crawling. The specimen (holotype) upon which this description is based was of average size and measured 37 mm. long, 6 mm. broad, and 6 mm. high when alive. The general shape of the body is eolidiform; the sides nearly vertical with their sharply defined dorso-lateral margins running parallel to the blunt tail. The dorsal surface is very slightly rounded.

The body is translucent white through which the internal organs may be seen faintly. A line of intense red-orange color starts on the anterior side at about the midpoint of one head tentacle, runs across the front of the head, and terminates at the same point on the other tentacle. A spot of this color occurs on the opposite side of each tentacle. The stalk of the rhinophore is white, the proximal half of the clavus is red-orange, and the distal half of a highly contrasting cream color. The liver diverticula show through the cerata causing them to appear black. The larger, more median cerata in most of the groups are usually colored a brilliant pink for their distal half although this may be replaced by a cream coloration. A pink spot without defined borders is often present on the head just anterior to the rhinophores. An irregular line of opaque white spots runs along either side of the body about midway up from the foot, and a similar one, often consisting of fewer spots or totally lacking, occurs on the midline of the dorsal surface starting between the rhinophores and running posteriorly to the tip of the tail where it appears on a distinct caudal crest. The foot is edged with opaque white and most of